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09/690,420	10/17/2000	Kazuo Ishikawa	5000-4810	3352

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EXAMINER

VANAMAN, FRANK BENNETT

ART UNIT

PAPER NUMBER

3618

DATE MAILED: 04/10/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/690,420

Applicant(s)
Ishikawa et al.

Examiner
Vanaman

Art Unit
3618



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Dec 28, 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-50 is/are pending in the application.
- 4a) Of the above, claim(s) 30-33, 35-37, 39, 41-44, 47, and 50 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3, 4, 8-10, 34, 38, 40, 45, 46, 48, and 49 is/are rejected.
- 7) ☒ Claim(s) 2, 5-7, and 11-29 is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☒ All b) ☐ Some* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- *See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892) 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 19) ☐ Notice of Informal Patent Application (PTO-152)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 4 20) ☐ Other:

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Election

1. Claims 30-33, 35-37, 39, 41-44, 47 and 50 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Species, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 8.

The examiner notes that applicant has selected claims 1-29, 34, 40, 45-46, and 48-49 as reading on the elected species. Claim 40 depends from claim 38, and includes all limitations thereof. As such, claim 38 has been included in the claims which will be examined. Applicant has not indicated any claim as being generic.

An office action on claims 1-29, 34, 38, 40, 45-46 and 48-49 follows.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 112

4. Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The recitation in claim 9 is confusing: claim 1 refers to a hydraulic brake, an actuator and a controller which operate the hydraulic brake. Claim 9, which includes all the limitations of claim 1, further recites, in apparent contradiction, that it is a wheel brake instead that operates in response to the actuator.

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Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

6. Claim 45 is rejected under 35 U.S.C. 102(b) as being anticipated by May et al. (US 5,431,241). May et al. teach a vehicle having a drive source (14), a differential (26), A pair of driving wheels (20, 22) connected to the drive source by the differential, a brake (24) which brakes the driving wheels, a skid detector (10) for detecting skid values of one or the other of the driving wheels (RLS, RRS) and a controller (120) which controls the drive source or the brake (e.g., 32, 34 in 10) for eliminating skidding (also note figure 5).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwata (US 5,279,382). Iwata teaches a vehicle having an engine (not shown: note, for example, elements 19, 21, 22) and driving wheels, hydraulic brakes (31, 32, 33, 34) for the wheels, brake valves (35a, 35b, 36c, 36d, 37a, 37b, etc.) for adjusting the hydraulic brake pressure, a brake actuator (27), a plurality of wheel speed sensors (1, 2, 3, 4, col. 5, lines 3-9), a TCS/ABS controller which allows

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normal braking to occur, and which determines when a wheel deceleration exceeds a deceleration threshold value (col. 8, lines 27-35), and sets the brake valves such that a lower braking force is generated (note figure 9). The reference of Iwata fails to explicitly teach a torque converter and transmission in the vehicle, however both torque converters and transmissions are very well known in the art and known to be provided between engine outputs and driven wheels on motor vehicles, and as such, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide a torque converter and transmission in order to allow the engine to drive the vehicle wheels. As regards claim 3, the reference to Iwata fails to teach the brake as being a hydraulic clutch parking brake. Hydraulic clutch type brakes are generally well known in the art, however, and it would have been obvious to one of ordinary skill in the art at the time of the invention to provide a hydraulic clutch parking brake, for example, on the power train, to control braking of the driven wheels of the vehicle with a single brake, for the purpose of allowing traction control braking to be effected by a smaller single braking device.

9. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Iwata in view of Matsuda (US 4,771,850). The reference of Iwata is discussed above and fails to specifically teach that the traction and slip control does not affect the degree of braking when the vehicle speed is below a predetermined value. Matsuda teaches a traction control system for a vehicle, wherein traction control is disabled or reduced in gain for vehicle speed below a threshold values (enabling/disabling criterion- note abstract lines 5-9). It would have been obvious to one of ordinary skill in the art at the time of the invention to discontinue the operation of the TCS/ABS system of Iwata below a threshold speed value as suggested by Matsuda in order to allow the vehicle to be safely stopped.

10. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Iwata in view of Rieker et al. (US 6,339,749, filed 1/1999). The reference of Iwata is discussed above and fails to

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teach an increase in braking force associated with an increase in vehicle load weight. Rieker et al. teach a system for determining a load weight on a vehicle, wherein the results of the weight determination are made available to various other vehicle systems such as a traction control or anti-lock braking system (see col. 6, lines 26-39 and 43-49). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide a load weight determination device such as taught by Rieker et al. to allow the driving conditions governing the vehicle to be accurately included in the TCS/ABS control of the vehicle. Particularly, it would have been obvious to one of ordinary skill in the art at the time of the invention to increase a braking force as a load weight increases in that a greater brake force would be required to achieve a similar braking effect as experienced with a smaller load.

11. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Iwata in view of Buschmann (US 5,312,169). The reference of Iwata fails to teach the use of a rate of change of wheel velocity in the determination of skidding occurrences. Buschmann teaches a controller for anti-lock and slip control, wherein wheel speeds are determined (1) and before processing, wheel speed rate of change (i.e., acceleration) is additionally determined (3). It would have been obvious to one of ordinary skill in the art at the time of the invention to include an acceleration determination as taught by Buschmann in the controller of Iwata for the purpose of controlling the magnitude of slip-control or anti-lock control based on the acceleration values, facilitating a faster reacquisition of traction for the vehicle.

12. Claim 48 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shimanaka et al. (US 5,150,761). Shimanaka et al. teach a vehicle having an engine (210) and a transmission (211) including a forward clutch (F/C) operated with a forward clutch valve (46), a reverse clutch (R/C) operated with a reverse clutch valve (68), a plurality of driving speed sensors (212, 212a) associated with a front and rear pair of wheels, one pair of which is driven by the transmission, a

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skid detector (219), wherein a transmission line pressure is decreased if the traction control determines that skidding occurs and controls an engine output power by decreasing a throttle valve opening (note col. 6, line 58 through col. 7, line 23).

The reference of Shimanaka et al. fails to teach the provision of a torque converter connecting the engine and transmission and driving wheel differential, however it is very old and well known to provide a torque converter to allow the engine to drive the transmission, and it would have been obvious to one of ordinary skill in the art at the time of the invention to provide a torque converter between the engine output and the transmission input in order to allow the engine to drive the wheels, similarly the use of a differential with the driving wheels of a vehicle, allowing different wheel speeds in cornering for example, is very old and well known, and it would have been obvious to one of ordinary skill in the art at the time of the invention to provide a differential to the driving wheels in order to allow the wheels to run at different speed when cornering, for example.

13. Claims 34, 38, 40 and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimanaka et al. (US 5,150,761) in view of Buschmann. The reference of Shimanaka et al. is discussed above and fails to teach the use of a rate of change of wheel velocity in the determination of skidding occurrences, wherein each wheel speed is measured. Buschmann teaches a controller for anti-lock and slip control, wherein wheel speeds for all vehicle wheels are determined (1) and before processing, wheel speed rate of change (i.e., acceleration) is additionally determined (3). It would have been obvious to one of ordinary skill in the art at the time of the invention to include an acceleration determination as taught by Buschmann in the controller of Shimanaka et al. for the purpose of controlling the magnitude of slip-control or anti-lock control based on the acceleration values, facilitating a faster reacquisition of traction for the vehicle.

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14. Claim 46 is rejected under 35 U.S.C. 103(a) as being unpatentable over May et al. in view of Buschmann (US 5,312,169). May et al. teach a vehicle having a drive source, a differential, A pair of driving wheels connected to the drive source by the differential, a brake which brakes the driving wheels, a skid detector for detecting skid values of one or the other of the driving wheels and a controller which controls the drive source or the brake for eliminating skidding. May et al. fail to teach the use of a rate of change of wheel velocity in the determination of skidding occurrences. Buschmann teaches a controller for anti-lock and slip control, wherein wheel speeds are determined (1) and before processing, wheel speed rate of change (i.e., acceleration) is additionally determined (3). It would have been obvious to one of ordinary skill in the art at the time of the invention to include an acceleration determination as taught by Buschmann in the controller of May et al. for the purpose of controlling the magnitude of slip-control or anti-lock control based on the acceleration values, facilitating a faster reacquisition of traction for the vehicle.

Allowable Subject Matter

15. Claim 9, as best understood, would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

16. Claims 2, 5-7, and 11-29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

17. Applicant is reminded that claims 30-33, 35-37, 39, 41-44, 47 and 50 are withdrawn from further consideration, and that no generic claims have been identified by applicant.

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Conclusion

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Yamaguchi (US 5,216,938), Miller et al. (US 5,491,634), Hrovat et al. (US 5,682,316), Tsuno et al. (US 5,719,565), and Sigl (US 5,794,735) teach vehicle operating systems of pertinence.

19. The Group and/or Art Unit location of your application in the PTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Group Art Unit 3618.

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to F. Vanaman whose telephone number is (703) 308-0424. Any inquiry of a general nature or relating to the status of this application should be directed to the group receptionist whose telephone number is (703) 308-1113.

Any response to this action should be mailed to:

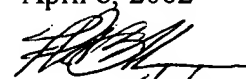
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or faxed to :

(703) 305-3597 or 305-7687 (for formal communications intended for entry;
informal or draft communications may be faxed to the same number but should be
clearly labeled "UNOFFICIAL" or "DRAFT")

F. VANAMAN
Primary Examiner
Art Unit 3618

F. Vanaman
April 8, 2002


4/8/02